

CLAIMS

1. A martensitic stainless steel pipe having a heat-affected zone with high resistance to intergranular stress corrosion cracking, containing:

less than 0.0100% of C;

less than 0.0100% of N;

10% to 14% of Cr; and

3% to 8% of Ni on a mass basis,

wherein the content C_{sol} defined by the following equation (1) is equal to less than 0.0050%:

$$C_{sol} = C - 1/3 \times C_{pre} \quad (1)$$

where $C_{pre} = 12.0 \{Ti/47.9 + 1/2 (Nb/92.9 + Zr/91.2) + 1/3 (V/50.9 + Hf/178.5 + Ta/180.9) - N/14.0\}$ or $C_{pre} = 0$ when $C_{pre} < 0$, where C represents the carbon content, Ti represents the titanium content, Nb represents the niobium content, Zr represents the zirconium content, V represents the vanadium content, Hf represents the hafnium content, Ta represents the tantalum content, and N represents the nitrogen content on a mass basis.

2. The martensitic stainless steel pipe according to Claim 1 containing:

less than 0.0100% of C;

less than 0.0100% of N;

10% to 14% of Cr;

3% to 8% of Ni;

0.05% to 1.0% of Si;

0.1% to 2.0% of Mn;

0.3% or less of P;

0.010% or less of S;

0.001% to 0.10% of Al;

one or more selected from the group consisting of 4% or less of Cu, 4% or less of Co, 4% or less of Mo, and 4% or less of W; and

one or more selected from the group consisting of 0.15% or less of Ti, 0.10% or less of Nb, 0.10% or less of V, 0.10% or less of Zr, 0.20% or less of Hf, and 0.20% or less of Ta on a mass basis, the remainder being Fe and unavoidable impurities, wherein the content C_{sol} defined by equation (1) is equal to less than 0.0050%.

3. The martensitic stainless steel pipe according to Claim 2 further containing one or more selected from the group consisting of 0.010% or less of Ca, 0.010% or less of Mg, 0.010% or less of REM, and 0.010% or less of B on a mass basis.

4. The martensitic stainless steel pipe according to Claim 1 containing:

less than 0.0100% of C;

less than 0.0100% of N;

10% to 14% of Cr;

3% to 8% of Ni;

0.05% to 1.0% of Si;

0.1% to 2.0% of Mn;

0.03% or less of P;

0.010% or less of S;

0.001% to 0.10% of Al;

0.02% to 0.10% of V;

0.0005% to 0.010% of Ca; and

one or more selected from the group consisting of 4% or less of Cu, 4% or less of Co, 4% or less of Mo, and 4% or less of W on a mass basis, the remainder being Fe and unavoidable

impurities,

wherein the content C_{sol} defined by equation (1) is equal to less than 0.0050%.

5. The martensitic stainless steel pipe according to Claim 4 further containing one or more selected from the group consisting of 0.15% or less of Ti, 0.10% or less of Nb, 0.10% or less of Zr, 0.20% or less of Hf, and 0.20% or less of Ta on a mass basis.

6. The martensitic stainless steel pipe according to any one of Claims 1 to 5 being for line pipe uses.

7. A welded structure comprising the martensitic stainless steel pipe according to any one of Claims 1 to 6, the pipe being welded to a member.